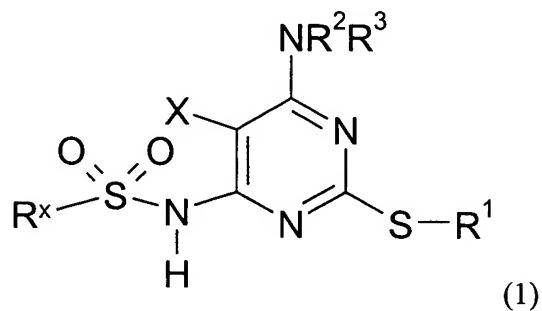


### Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

### **Listing of Claims:**

1. (Original) A compound of formula (1), pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof:



wherein R<sup>1</sup> is a group selected from C<sub>3-7</sub>carbocyclyl, C<sub>1-8</sub>alkyl, C<sub>2-6</sub>alkenyl and C<sub>2-6</sub>alkynyl; wherein the group is optionally substituted by 1, 2 or 3 substituents independently selected from fluoro, nitrile, -OR<sup>4</sup>, -NR<sup>5</sup>R<sup>6</sup>, -CONR<sup>5</sup>R<sup>6</sup>, -COOR<sup>7</sup>, -NR<sup>8</sup>COR<sup>9</sup>, -SR<sup>10</sup>, -SO<sub>2</sub>R<sup>10</sup>, -SO<sub>2</sub>NR<sup>5</sup>R<sup>6</sup>, -NR<sup>8</sup>SO<sub>2</sub>R<sup>9</sup>, phenyl or heteroaryl; wherein phenyl and heteroaryl are optionally substituted by 1, 2 or 3 substituents independently selected from halo, cyano, nitro, -OR<sup>4</sup>, -NR<sup>5</sup>R<sup>6</sup>, -CONR<sup>5</sup>R<sup>6</sup>, -COOR<sup>7</sup>, -NR<sup>8</sup>COR<sup>9</sup>, -SR<sup>10</sup>, -SO<sub>2</sub>R<sup>10</sup>, -SO<sub>2</sub>NR<sup>5</sup>R<sup>6</sup>, -NR<sup>8</sup>SO<sub>2</sub>R<sup>9</sup>, C<sub>1-6</sub>alkyl and trifluoromethyl;

wherein R<sup>2</sup> is C<sub>3-7</sub>carbocyclyl, optionally substituted by 1, 2 or 3 substituents independently selected from:

- (a) fluoro, -OR<sup>4</sup>, -NR<sup>5</sup>R<sup>6</sup> -CONR<sup>5</sup>R<sup>6</sup>, -COOR<sup>7</sup>, -NR<sup>8</sup>COR<sup>9</sup>, -SR<sup>10</sup>, -SO<sub>2</sub>R<sup>10</sup>, -SO<sub>2</sub>NR<sup>5</sup>R<sup>6</sup>, -NR<sup>8</sup>SO<sub>2</sub>R<sup>9</sup>;
- (b) a 3-8 membered ring optionally containing 1, 2 or 3 atoms selected from O, S, -NR<sup>8</sup> and whereby the ring is optionally substituted by C<sub>1-3</sub>alkyl or fluoro; or
- (c) phenyl or heteroaryl, each of which is optionally substituted by 1, 2 or 3 substituents independently selected from halo, cyano, nitro, -OR<sup>4</sup>, -NR<sup>5</sup>R<sup>6</sup>, -CONR<sup>5</sup>R<sup>6</sup>, -NR<sup>8</sup>COR<sup>9</sup>, -SO<sub>2</sub>NR<sup>5</sup>R<sup>6</sup>, -NR<sup>8</sup>SO<sub>2</sub>R<sup>9</sup>, C<sub>1-6</sub>alkyl and trifluoromethyl;

or R<sup>2</sup> is a group selected from C<sub>1-8</sub>alkyl, C<sub>2-6</sub>alkenyl or C<sub>2-6</sub>alkynyl wherein the group is substituted by 1, 2 or 3 substituents independently selected from hydroxy, amino, C<sub>1-6</sub>alkoxy, C<sub>1-6</sub>alkylamino, di(C<sub>1-6</sub>alkyl)amino, N-(C<sub>1-6</sub>alkyl)-N-(phenyl)amino, N-C<sub>1-6</sub>alkylcarbamoyl, N,N-di(C<sub>1-6</sub>alkyl)carbamoyl, N-(C<sub>1-6</sub>alkyl)-N-(phenyl)carbamoyl, carboxy, phenoxy carbonyl, -NR<sup>8</sup>COR<sup>9</sup>, -SO<sub>2</sub>R<sup>10</sup>, -SO<sub>2</sub>NR<sup>5</sup>R<sup>6</sup> and -NR<sup>8</sup>SO<sub>2</sub>R<sup>9</sup>;

wherein R<sup>3</sup> is hydrogen or independently R<sup>2</sup>;

R<sup>4</sup> is hydrogen or a group selected from C<sub>1-6</sub>alkyl and phenyl, wherein the group is optionally substituted by 1 or 2 substituents independently selected from halo, phenyl, -OR<sup>11</sup> and -NR<sup>12</sup>R<sup>13</sup>;

R<sup>5</sup> and R<sup>6</sup> are independently hydrogen or a group selected from C<sub>1-6</sub>alkyl and phenyl wherein the group is optionally substituted by 1, 2 or 3 substituents independently selected from halo, phenyl, -OR<sup>14</sup>, -NR<sup>15</sup>R<sup>16</sup>, -COOR<sup>14</sup>, -CONR<sup>15</sup>R<sup>16</sup>, -NR<sup>15</sup>COR<sup>16</sup>, -SO<sub>2</sub>R<sup>10</sup>, -SONR<sup>15</sup>R<sup>16</sup> and NR<sup>15</sup>SO<sub>2</sub>R<sup>16</sup> or

R<sup>5</sup> and R<sup>6</sup> together with the nitrogen atom to which they are attached form a 4- to 7-membered saturated heterocyclic ring system optionally containing a further heteroatom selected from oxygen and nitrogen atoms, which ring is optionally substituted by 1, 2 or 3 substituents independently selected from phenyl, -OR<sup>14</sup>, -COOR<sup>14</sup>, -NR<sup>15</sup>R<sup>16</sup>, -CONR<sup>15</sup>R<sup>16</sup>, -NR<sup>15</sup>COR<sup>16</sup>, -

$\text{SO}_2\text{R}^{10}$ ,  $-\text{SONR}^{15}\text{R}^{16}$ ,  $\text{NR}^{15}\text{SO}_2\text{R}^{16}$  or  $\text{C}_{1-6}\text{alkyl}$  (optionally substituted by 1 or 2 substituents independently selected from halo,  $-\text{NR}^{15}\text{R}^{16}$  and  $-\text{OR}^{17}$  groups);

$\text{R}^{10}$  is hydrogen or a group selected from  $\text{C}_{1-6}\text{alkyl}$  or phenyl, wherein the group is optionally substituted by 1, 2 or 3 substituents independently selected from halo, phenyl,  $-\text{OR}^{17}$  and  $-\text{NR}^{15}\text{R}^{16}$ ; and

each of  $\text{R}^7$ ,  $\text{R}^8$ ,  $\text{R}^9$ ,  $\text{R}^{11}$ ,  $\text{R}^{12}$ ,  $\text{R}^{13}$ ,  $\text{R}^{14}$ ,  $\text{R}^{15}$ ,  $\text{R}^{16}$ ,  $\text{R}^{17}$  is independently hydrogen,  $\text{C}_{1-6}\text{alkyl}$  or phenyl;

$\text{X}$  is hydrogen, halo, cyano, nitro, hydroxy,  $\text{C}_{1-6}\text{alkoxy}$  (optionally substituted by 1 or 2 substituents selected from halo,  $-\text{OR}^{11}$  and  $-\text{NR}^{12}\text{R}^{13}$ ),  $-\text{NR}^5\text{R}^6$ ,  $-\text{COOR}^7$ ,  $-\text{NR}^8\text{COR}^9$ , thio,  $\text{C}_{1-6}\text{alkylthio}$  (optionally substituted by 1 or 2 substituents selected from halo,  $-\text{OR}^{17}$ ,  $-\text{NR}^{15}\text{R}^{16}$ ),  $-\text{SO}_2\text{R}^{10}$  or a group selected from  $\text{C}_{3-7}\text{carbocyclyl}$ ,  $\text{C}_{1-8}\text{alkyl}$ ,  $\text{C}_{2-6}\text{alkenyl}$  or  $\text{C}_{2-6}\text{alkynyl}$ , wherein the group is optionally substituted by 1, 2 or 3 substituents independently selected from halo,  $-\text{OR}^4$ ,  $-\text{NR}^5\text{R}^6$ ,  $-\text{CONR}^5\text{R}^6$ ,  $-\text{COOR}^7$ ,  $-\text{NR}^8\text{COR}^9$ ,  $-\text{SR}^{10}$ ,  $-\text{SO}_2\text{R}^{10}$ ,  $-\text{SO}_2\text{NR}^5\text{R}^6$  and  $-\text{NR}^8\text{SO}_2\text{R}^9$ ;

$\text{R}^x$  is trifluoromethyl,  $-\text{NR}^5\text{R}^6$ , phenyl, napthyl, monocyclic or bicyclic heteroaryl wherein a heteroring may be partially or fully saturated and one or more ring carbon atoms may form a carbonyl group, and wherein each phenyl or heteroaryl group is optionally substituted by 1, 2 or 3 substituents independently selected from halo, cyano, nitro,  $-\text{OR}^4$ ,  $-\text{NR}^5\text{R}^6$ ,  $-\text{CONR}^5\text{R}^6$ ,  $-\text{COR}^7$ ,  $-\text{COOR}^7$ ,  $-\text{NR}^8\text{COR}^9$ ,  $-\text{SR}^{10}$ ,  $-\text{SO}_2\text{R}^{10}$ ,  $-\text{SO}_2\text{NR}^5\text{R}^6$ ,  $-\text{NR}^8\text{SO}_2\text{R}^9$ ,  $\text{C}_{1-6}\text{alkyl}$  or trifluoromethyl; or  $\text{R}^x$  is a group selected from  $\text{C}_{3-7}\text{carbocyclyl}$ ,  $\text{C}_{1-8}\text{alkyl}$ ,  $\text{C}_{2-6}\text{alkenyl}$  and  $\text{C}_{2-6}\text{alkynyl}$  whereby the group is optionally substituted by 1, 2 or 3 substituents independently selected from halo,  $-\text{OR}^4$ ,  $-\text{NR}^5\text{R}^6$ ,  $-\text{CONR}^5\text{R}^6$ ,  $-\text{COR}^7$ ,  $-\text{COOR}^7$ ,  $-\text{NR}^8\text{COR}^9$ ,  $-\text{SR}^{10}$ ,  $-\text{SO}_2\text{R}^{10}$ ,  $-\text{SO}_2\text{NR}^5\text{R}^6$ ,  $-\text{NR}^8\text{SO}_2\text{R}^9$ , phenyl or heteroaryl; and wherein each phenyl or heteroaryl group is optionally substituted by 1, 2 or 3 substituents independently selected from halo, cyano, nitro,  $-\text{OR}^4$ ,  $-\text{NR}^5\text{R}^6$ ,  $-\text{CONR}^5\text{R}^6$ ,  $-\text{COR}^7$ ,  $-\text{COOR}^7$ ,  $-\text{NR}^8\text{COR}^9$ ,  $-\text{SR}^{10}$ ,  $-\text{SO}_2\text{R}^{10}$ ,  $-\text{SO}_2\text{NR}^5\text{R}^6$ ,  $-\text{NR}^8\text{SO}_2\text{R}^9$ ,  $\text{C}_{1-6}\text{alkyl}$  or trifluoromethyl;

or  $R^x$  and X together form a 4 to 8-membered sulfonamide ring optionally substituted by 1, 2 or 3 substituents independently selected from halo,  $-OR^4$ ,  $-NR^5R^6$ ,  $-CONR^5R^6$ ,  $-COOR^7$ ,  $-NR^8COR^9$ ,  $-SR^{10}$ ,  $-SO_2R^{10}$ ,  $-SO_2NR^5R^6$ ,  $-NR^8SO_2R^9$ , phenyl or heteroaryl; wherein phenyl and heteroaryl are optionally substituted by 1, 2 or 3 substituents independently selected from halo, cyano, nitro,  $-OR^4$ ,  $-NR^5R^6$ ,  $-CONR^5R^6$ ,  $-COOR^7$ ,  $-NR^8COR^9$ ,  $-SR^{10}$ ,  $-SO_2R^{10}$ ,  $-SO_2NR^5R^6$ ,  $-NR^8SO_2R^9$ ,  $C_{1-6}$ alkyl and trifluoromethyl.

2. (Original) A compound, pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof according to claim 1 wherein  $R^2$  is  $C_{1-8}$ alkyl optionally substituted by 1 or 2 hydroxy substituents.
3. (Original) A compound, pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof according to claim 1 wherein  $R^1$  is benzyl optionally substituted by 1, 2 or 3 substituents independently selected from fluoro, chloro, bromo, methoxy, methyl and trifluoromethyl.
4. (Currently amended) A compound, pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof according to claim 1 wherein  $R^3$  is hydrogen.
5. (Currently amended) A compound, pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof according to claim 1 wherein X is hydrogen.
6. (Currently amended) A compound, pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof according to claim 1 wherein  $R^x$  is methyl, 1-methylimidazolyl, 1,2-dimethylimidazolyl, *N,N*-dimethylamino, azetidinyl, pyrrolidinyl, morpholinyl and piperidinyl.
7. (Original) A compound selected from the group consisting of:

*N*-(2-[(3-Chloro-2-fluorobenzyl)thio]-6-{{[(1*R*)-2-hydroxy-1-methylethyl]amino}-pyrimidin-4-yl)methanesulfonamide

*N*-[2-[(3-Chloro-2-fluorobenzyl)thio]-6-[(2-hydroxy-1-methylethyl)amino]-4-pyrimidinyl]-4-morpholinesulfonamide

*N*-[2-[(3-Chloro-2-fluorophenyl)methyl]thio]-6-[(2-hydroxy-1-methylethyl)amino]-4-pyrimidinyl]-1,2-dimethyl-1*H*-imidazole-4-sulfonamide

*N*-(2-[(2,3-Difluorobenzyl)thio]-6-{{[(1*R*)-2-hydroxy-1-methylethyl]amino}pyrimidin-4-yl)piperidine-1-sulfonamide

*N*-(2-[(2,3-Difluorobenzyl)thio]-6-{{[(1*R*)-2-hydroxy-1-methylethyl]amino}pyrimidin-4-yl)pyrrolidine-1-sulfonamide

*N*-(2-[(2,3-Difluorobenzyl)thio]-6-{{[(1*R*)-2-hydroxy-1-methylethyl]amino}pyrimidin-4-yl)azetidine-1-sulfonamide

*N*-{6-{{[(1*R*)-2-Hydroxy-1-methylethyl]amino}-2-[(2,3,4-trifluorobenzyl)thio]-pyrimidin-4-yl}morpholine-4-sulfonamide

*N*-(2-[(2,3-Difluorobenzyl)thio]-6-{{[(1*R*)-2-hydroxy-1-methylethyl]amino}pyrimidin-4-yl)morpholine-4-sulfonamide

*N*-(2-[(3-Chloro-2-fluorobenzyl)thio]-6-{{[(1*R*)-2-hydroxy-1-methylethyl]amino}-pyrimidin-4-yl)azetidine-1-sulfonamide

*N*-{6-{{[(1*R*)-2-Hydroxy-1-methylethyl]amino}-2-[(2,3,4-trifluorobenzyl)thio]-pyrimidin-4-yl}azetidine-1-sulfonamide

*N*-(2-[(3-Chloro-2-fluorobenzyl)thio]-6-{{[(1*R*)-2-hydroxy-1-methylethyl]amino}-pyrimidin-4-yl)-*N,N*-dimethylsulfamide

*N*-[2-[(3-Chloro-2-fluorophenyl)methyl]thio]-6-[(*R*)-(2-hydroxy-1-methylethyl)amino]-4-pyrimidinyl]-1-methyl-1*H*-imidazole-4-sulfonamide;

and a pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof.

8. (Cancelled)

9. (Currently amended) A method for the treatment of asthma, allergic rhinitis, COPD, inflammatory bowel disease, osteoarthritis, osteoporosis, rheumatoid arthritis, or psoriasis comprising administering a A compound, pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof according to any one of claims 1 to 7 claim 1 for use as a medicament for the treatment of asthma, allergic rhinitis, COPD, inflammatory bowel disease, osteoarthritis, osteoporosis, rheumatoid arthritis, or psoriasis.

10. (Currently amended) A method for the treatment of cancer comprising administering a A compound, pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof according to any one of claims 1-7 claim 1, for use as a medicament for the treatment of cancer.

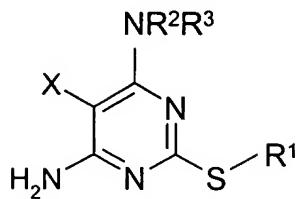
11. (Currently amended) A method for the treatment of a human disease or condition in which modulation of chemokine receptor activity is beneficial comprising administering The use of a compound, pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof, according to any one of claims 1 to 7 claim 1 in the manufacture of a medicament for the treatment of human diseases or conditions in which modulation of chemokine receptor activity is beneficial.

12-13. (Cancelled)

14. (Currently amended) A pharmaceutical composition comprising a compound, pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof according to any one of claims 1 to 7 claim 1; and a pharmaceutically-acceptable diluent or carrier.

15. (Currently amended) A process for the preparation of a compound according to claim 1 comprising the steps of:

a) treating a compound of formula (2):



(2)

wherein R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup> and X are as defined in claim 1, with sulfonyl chlorides (R<sup>x</sup>SO<sub>2</sub>Cl where R<sup>x</sup> is as defined in claim 1;

or

b) treating a compound of formula (7):



(7)

wherein R<sup>1</sup>, R<sup>x</sup> and X are as defined in formula (1) claim 1, L is a halogen and Y is either hydrogen or a protecting group with nucleophilic amines of the type NR<sup>2</sup>R<sup>3</sup> as defined in formula (1) claim 1 in the presence or absence of a suitable base and solvent;

or

c) treating a compound of formula (8):



(8)

wherein R<sup>1</sup>, R<sup>x</sup> and X are as defined in claim 1 formula (1) and L is halogen, with sulfonamides of formula R<sup>x</sup>SO<sub>2</sub>NH<sub>2</sub> where R<sup>x</sup> is as defined in claim 1 formula (1) except NR<sup>5</sup>R<sup>6</sup> in the presence of a suitable base and solvent.

and

independently for each of process variants a), b) or c), optionally thereafter (i), (ii), (iii), (iv) or (v) in any order:

- i) removing any protecting groups;
- ii) converting the compound of formula (1) into a further compound of formula (1)
- iii) forming a salt
- iv) forming a prodrug
- v) forming an *in vivo* hydrolysable ester.

16. (Currently amended) A combination therapy which comprises administering a compound of formula (1) as defined in claim 1 or a pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof, or a pharmaceutical composition or formulation comprising a compound of formula (1) as defined in claim 1, concurrently or sequentially with other therapy and/or another pharmaceutical agent.

17. (Currently amended) A combination therapy as claimed in claim 16 ~~for the treatment wherein the amount of the compound in the composition is effective for treating of~~ asthma, allergic rhinitis, COPD, inflammatory bowel disease, irritable bowel syndrome, osteoarthritis, osteoporosis, rheumatoid arthritis, or psoriasis.

18. (Currently amended) A combination therapy as claimed in claim 16 ~~for the treatment wherein the amount of the compound in the composition is effective for treating of~~ cancer.

19. (Currently amended) A pharmaceutical composition which comprises a compound of formula (1) as defined in claim 1 or a pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof, in conjunction with another pharmaceutical agent.

20. (Currently amended) A pharmaceutical composition as claimed in claim 19 ~~for the treatment of wherein the amount of the compound in the composition is effective for treating~~ asthma, allergic rhinitis, COPD, inflammatory bowel disease, irritable bowel syndrome, osteoarthritis, osteoporosis, rheumatoid arthritis, or psoriasis.

21. (Currently amended) A pharmaceutical composition as claimed in claim 19 ~~for the treatment of wherein the amount of the compound in the composition is effective for treating~~ cancer.